Braeburn

Installer Guide

BlueLink

Universal Wireless Thermostat Kit

8500 Up to 3 Heat / 2 Cool Heat Pump
Up to 2 Heat / 2 Cool Conventional

⚠ **Warning** ***For installation by experienced service technicians only.***

⚠ **Caution** • ***Possible electric shock or damage to equipment can occur.***
• ***Disconnect power before beginning installation.***

This thermostat requires 2 properly installed "AA" Alkaline batteries for proper operation. When connecting optional 24 Volt AC power the batteries may be installed as a backup.

For use only as described in this manual. Any other use will void warranty.

1 Specifications

KIT INCLUDES: Wireless thermostat, control module, batteries and return air plenum sensor.

This thermostat is compatible with:
- Single stage heat / cool conventional and heat pump systems
- Conventional systems up to 2 stages of heating and 2 stages of cooling
- Heat pump systems up to 3 stages of heating and 2 stages of cooling
- 2 or 3 wire hydronic zone systems

Electrical and control specifications:
- Electrical Rating: 24 Volt AC
- 1 amp maximum load per terminal
- AC Power: 18 – 30 Volts AC
- DC Power: 3.0 Volt DC (2 "AA" Alkaline Batteries Included)
- Control Range: 45° – 90° F (7° – 32° C)
- Temperature Accuracy: +/- 1° F (+/- .5° C)
- Outdoor Temperature Display Range: -40° - 120° F (-40° - 49° C)

Terminations
Thermostat: R, C (optional 24 VAC power terminals)
Control Module: Rh, Rc, G, W1/E, W2/AUX, Y1, Y2, O/B/V3, L, C, P1, P2, S1, S2

2 Installation

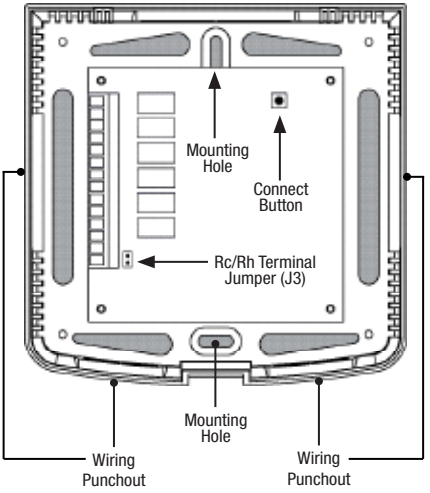
1 Install and Wire the Control Module

⚠ Warning ***Disconnect power before beginning installation.***

Control Module Location

Install the control module on a wall near the HVAC equipment.

- Remove the cover of the control module.
- Mount the control module using the two mounting holes and the appropriate type of screws for the application.



For Best Wireless Performance

- Do not enclose the control module inside a metal box or cabinet.
- Avoid mounting on a metal surface whenever possible.
- Not recommended for use in rooms or buildings with radio equipment, industrial machinery or medical equipment.
- Take care when used in rooftop applications, ensuring to protect the control module from the elements while avoiding mounting on, or enclosing in metal.

Install Return Air Sensor (required)

The Return Air Sensor maintains default temperature control if wireless communication is lost.

- Install the Return Air Sensor at least 12 inches upstream of any humidification or ventilation equipment.
- Connect the Return Air Sensor to the P1 and P2 terminals on the control module.
- For hydronic applications, mount sensor in an area that maintains living space temperature. Do not mount on the supply pipes.

For Wiring Information, see Section 3 - Wiring, on page 6.

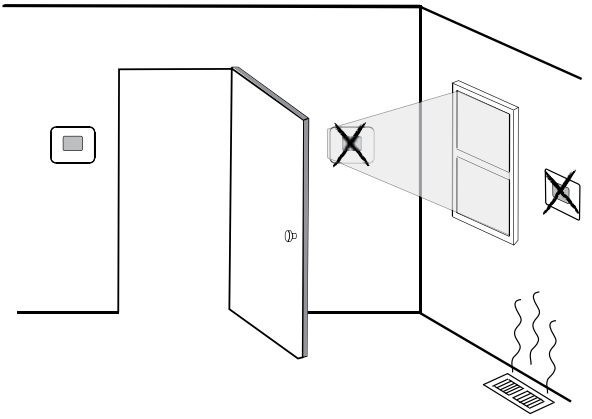
2 Install the Thermostat

NOTE: *Test location by pairing your thermostat before mounting (see pages 5 and 12).*

Thermostat Location

Install the thermostat approximately 5 feet (1.5m) above the floor in an area that has a good amount of air circulation and maintains an average room temperature.

Avoid installation in locations where the thermostat can be affected by drafts, dead air spots, hot or cold air ducts, sunlight, appliances, concealed pipes, chimneys and outside walls.



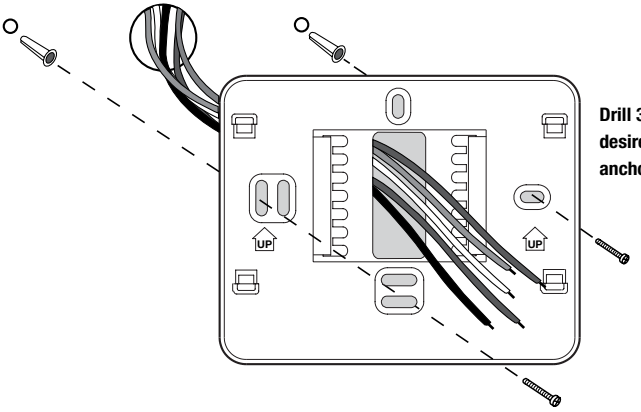
When evaluating a potential mounting location for the thermostat, consider the following factors:

- Distance from the control module
- Proximity to devices that may cause radio frequency interference
- Objects located between the control module and thermostat that may impede wireless communication, such as large electronic equipment.

For more information on best mounting practices, contact our technical support team at 844-BLU-LINK (844-258-5465) or 630-844-1968 if dialing from outside the U.S.

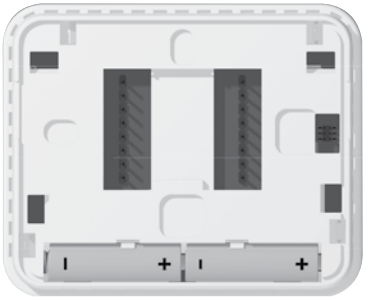
3 Install the Sub-Base:

- Remove the sub-base from the body of the thermostat.
- Mount the sub-base as shown below:



Drill 3/16" pilot holes in your desired location. Use supplied anchors for drywall or plaster.

4 Provide Power to Thermostat



Batteries Installed as Shown

- **Battery Power** - Insert the 2 supplied "AA" type alkaline batteries into the battery compartment located in the rear housing of the thermostat. Make sure to position the Positive (+) and Negative (-) sides of the batteries correctly with the +/- symbols in the battery compartment.
- **Optional 24 Volt AC power** - Connect the common side of the transformer to the C terminal on the thermostat sub-base. In dual transformer installations, the transformer common must come from the cooling transformer.

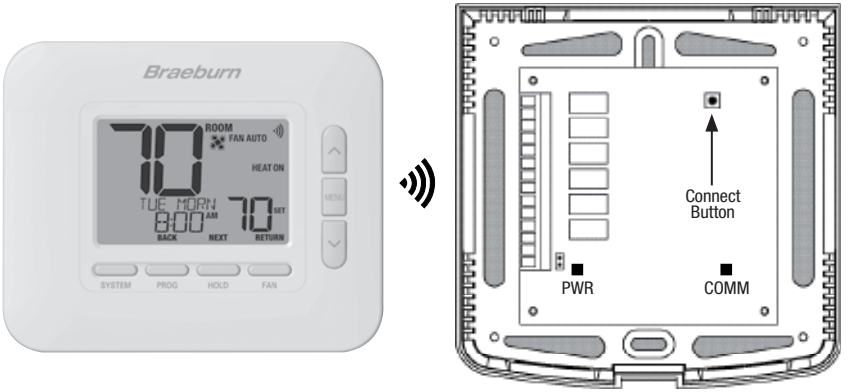
5 Attach Thermostat to Sub-Base

Once you complete the wiring in Section 3, attach thermostat to sub-base and then configure the Installer Settings in Section 6.

1) Line up the thermostat body with the sub-base.
2) Carefully push the thermostat body against the sub-base until it snaps in place.

NOTE: This thermostat ships configured as a 1 Heat / 1 Cool conventional (CONV 11) thermostat. You must configure the thermostat for other system types using the Installer Settings menu. See section 6.

6 Pairing the Thermostat with Control Module



1 At the thermostat, press and release the **MENU** button. OPTIONS SET will appear. Use the ∧ and ∨ buttons to select WIRELESS SET, then press **NEXT** (HOLD).

2 When PAIR NONE is displayed, use the ∧ and ∨ buttons to select PAIR CMOD, then press **NEXT** (HOLD). PAIRING CMOD should display.

3 At the control module, open front cover and press the CONNECT button for 3 seconds. The COMM LED should flash slowly while the module attempts to pair. When it is successful, the COMM LED will turn solid blue, and the thermostat will display PAIRED CMOD.

4 You can now reinstall the cover of the control module and press **RETURN** (FAN) at the thermostat to return it to the normal display. Pairing is complete!

NOTE: *If you encounter difficulty pairing, see section 5 - WIRELESS SETUP on page 11.*

Conventional Systems - *Typical Wiring Configurations for the Control Module*

Wiring Terminal	Terminal Description	Heat Only Hydronic *System Type: HD 1*	Heat Only *System Type: CONV 11*	Cool Only *System Type: CONV 11*	1 Hydronic/ 1 Cool *System Type HD 11*	1 Heat/ 1 Cool *System Type: CONV 11*	2 Heat/ 2 Cool *System Type: CONV 22*
Rh	24 VAC Heating Transformer	Rh	Rh	-	Rh[1]	Rh[1]	Rh[1]
Rc	24 VAC Cooling Transformer	-	-	Rc	Rc[1,2]	Rc[1,2]	Rc[1,2]
G	Fan Relay	-	G[4]	G	G	G	G
W1/E	(W1) Conventional Heat Relay (E) Emergency Heat Relay	W1	W1	-	W1	W1	W1
W2/AUX	(W2) 2nd Stage Conventional Heat (AUX) Heat Pump Auxiliary Heat	-	-	-	-	-	W2[4]
O/B/V3	(O) Cool Active Reversing Valve (B) Heat Active Reversing Valve (V3) Zone Valve Power Close	V3[4]	-	-	V3[4]	-	-
Y1	1st Stage Compressor Relay	-	-	Y1	Y1	-	Y1
Y2	2nd Stage Compressor Relay	-	-	-	-	-	Y2[4]
L	System Fault Indicator	-	-	-	-	-	-
C	24 VAC Transformer Common	C	C	C	C[3]	C[3]	C[3]
P1	Return Air Plenum Sensor - **REQUIRED**	P1	P1	P1	P1	P1	P1
P2		P2	P2	P2	P2	P2	P2

"System Type" is configured in the Installer Settings - See section 6.

NOTES - Conventional Systems

1 Remove factory installed jumper for dual transformer systems
2 Only required for dual transformer systems
3 For dual transformer systems, common must come from cooling transformer
4 Only connect if needed for system

Provide disconnect and overload protection as required.

Additional Wiring Options

Sensor Wiring Options

These terminals can be used to connect a Braeburn® wired indoor or outdoor remote sensor. Once connected, the remote sensor must be configured in the thermostat's Installer Settings menu (section 6).

S1	Indoor or Outdoor Remote Sensor (wired)
S2	

Thermostat Wiring Options

R	Optional 24 VAC Wiring Connections
C	

Heat Pump Systems - *Typical Wiring Configurations for the Control Module*

Wiring Terminal	Terminal Description	1 Heat/1 Cool *System Type: HP 11*	2 Heat/1 Cool (w/Aux Heat) *System Type: HP 21*	2 Heat/2 Cool *System Type: HP 32*	3 Heat/2 Cool (w/Aux Heat) *System Type: HP 32*
Rh	24 VAC Heating Transformer	Rh	Rh	Rh	Rh
Rc	24 VAC Cooling Transformer	-	-	-	-
G	Fan Relay	G	G	G	G
W1/E	(W1) Conventional Heat Relay (E) Emergency Heat Relay	-	E[2]	-	E[2]
W2/AUX	(W2) 2nd Stage Conventional Heat (AUX) Heat Pump Auxiliary Heat	-	AUX[2]	-	AUX[2]
O/B/V3	(O) Cool Active Reversing Valve (B) Heat Active Reversing Valve (V3) Zone Valve Power Close	O/B[1]	O/B[1]	O/B[1]	O/B[1]
Y1	1st Stage Compressor Relay	Y1	Y1	Y1	Y1
Y2	2nd Stage Compressor Relay	-	-	Y2	Y2
L	System Fault Indicator	L	L	L	L
C	24 VAC Transformer Common	C	C	C	C
P1	Return Air Plenum Sensor - **REQUIRED**	P1	P1	P1	P1
P2		P2	P2	P2	P2

"System Type" is configured in the Installer Settings - See section 6.

NOTES - Heat Pump Systems

1 O (cool active) or B (heat active) is selected in the Installer Settings menu

2 If no separate emergency heat relay, connect to either AUX or E and Install a field supplied jumper wire

Provide disconnect and overload protection as required.

Additional Wiring Options

Sensor Wiring Options

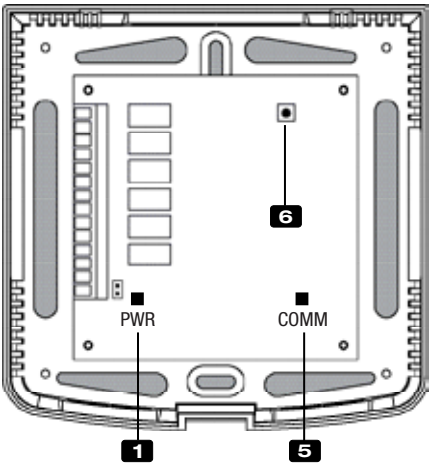
These terminals can be used to connect a Braeburn® wired indoor or outdoor remote sensor. Once connected, the remote sensor must be configured in the thermostat's Installer Settings menu (section 6).

S1	Indoor or Outdoor Remote Sensor (wired)
S2	

Thermostat Wiring Options

R	Optional 24 VAC Wiring Connections
C	

4 Quick Reference



Control Module LED Indicators

1 PWR: 24 VAC Power Indicator
2 HEAT: HEAT ON Indicator
3 COOL: COOL ON Indicator
4 FAN: FAN ON Indicator
5 COMM: Communication Indicator

Communication Indicator (COMM)

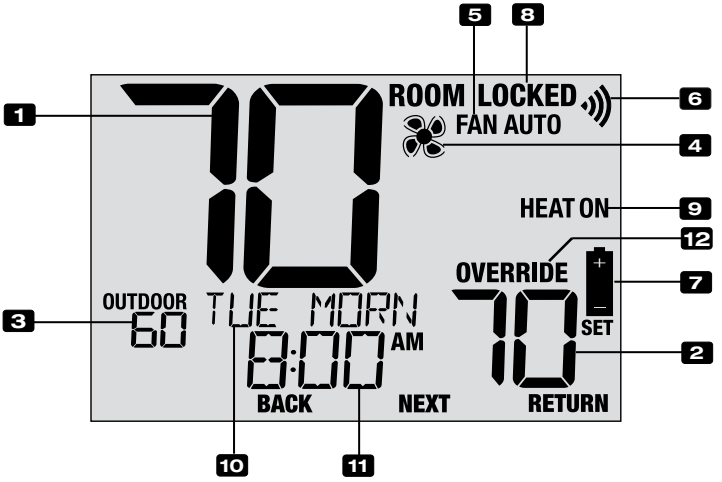
- Solid blue: Normal Operation
- Rapid blue flash: Sending Data to Thermostat
- 1 blue flash every 2 seconds: Control Module in Pairing Mode
- Flashing, then solid blue: Successfully Paired
- 1 red flash every 10 seconds: Lost Communication

Connect Button

The Connect Button is used to pair the control module with the thermostat, or to reset the control module pairings.

6 Connect Button

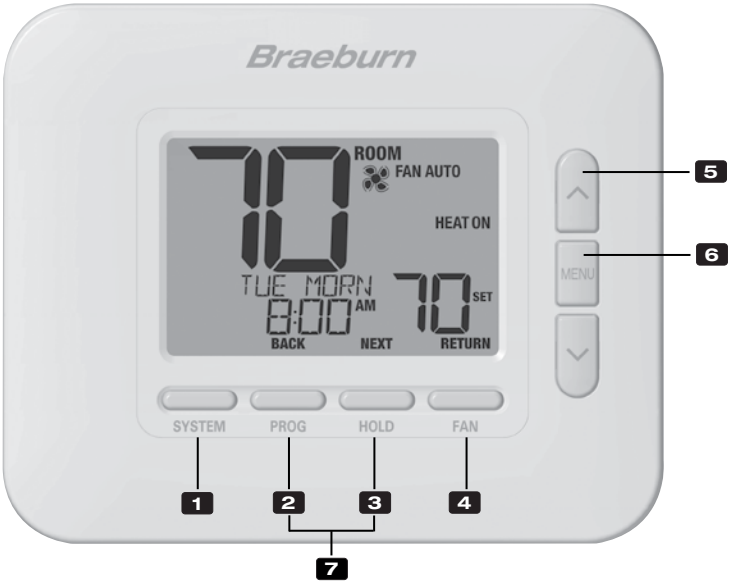
4 Quick Reference



Thermostat Display

1. **Room Temperature** ..... Displays the current room temperature
2. **Set Temperature** ..... Displays the current set point temperature
3. **Outdoor Temperature Indicator** ... Displays the outdoor temperature reading (requires a Braeburn® outdoor temperature sensor connection)
4. **Fan Indicator** ..... Indicates when the system fan is running
5. **Fan Mode Indicator** ..... Indicates the current fan mode
6. **Wireless Indicator** ..... Indicates a wireless connection (flashes when connection has been lost)
7. **Low Battery Indicator** ..... Indicates when the batteries need to be replaced
8. **Lock Mode Indicator** ..... Indicates if the thermostat is locked
9. **System Mode Indicator** ..... Displays information about the system mode and status
10. **Message Center** ..... Displays various thermostat status and maintenance information
11. **Time of Day** ..... Displays the current time of day
12. **Override Indicator** ..... Indicates the current program schedule has been temporarily overridden

4 Quick Reference



Thermostat

1 **SYSTEM Button** .....Selects the system you want to control

2 **PROG Button**.....Enters programming mode or hold for 3 seconds to enter SpeedSet® mode
BACK Button*.....Secondary function of the **PROG** button - Moves to previous setting

3 **HOLD Button**.....Enters / Exits the **HOLD** mode (program bypass mode)
NEXT Button* .....Secondary function of the **HOLD** button - Moves to next setting

4 **FAN Button** .....Selects the system fan mode
RETURN Button*.....Secondary function of the **FAN** button - Exits program or setting modes

5 **Up / Down Arrow Buttons**.....Increases or decreases settings (time, temperature, etc.)

6 **MENU Button**.....Used to access thermostat User / Installer setting modes

7 **Lock / Unlock Thermostat**....Access user Lock / Unlock screen by holding **PROG** and **HOLD** together for 5 seconds

Battery Compartment.....Located on the back side of thermostat (if installed)

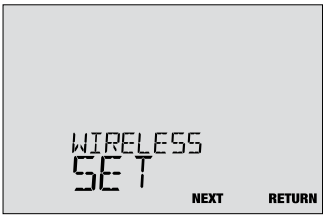
*** BACK, NEXT** and **RETURN** are secondary functions of the **PROG, HOLD** and **FAN** buttons When in programming or configuration modes, **BACK, NEXT** and **RETURN** appear in the display screen indicating that the **PROG, HOLD** and **FAN** buttons now function as **BACK, NEXT** and **RETURN**.

5 Wireless Setup

The Wireless Menu allows you to pair wireless devices, review devices currently paired, and to clear wireless connections when necessary.

To Enter the Wireless Menu

1. Press and release the **MENU** button
2. Use the ∧ or ∨ buttons to select WIRELESS SET
3. Press **NEXT** (HOLD) to confirm this choice and enter the User Settings Menu
4. Press **NEXT** (HOLD) or **BACK** (PROG) to move to the next or previous setting



No.	Installer Setting	Displayed	Default Setting	Available Settings	Description of Available Settings
1	**Wireless Pairing Mode**	PAIR	NONE	NONE	Select if you do not want to initiate wireless pairing
				CMOD	Select to pair with a control module
				SENS	Select to pair with wireless remote sensors
	This option is used to initiate the Wireless pairing process. Choose the device you would like to pair the thermostat with. Select NONE to move to the next menu option without initiating pairing mode.				
2	**Control Module Pairing Mode**	CMOD	PAIRING	PAIRING	This will appear if the thermostat is not connected to a control module. While displayed, the thermostat is ready to pair with a control module.
				PAIRED	This display indicates that the thermostat is already paired with a control module.
	[Only appears if CMOD was selected for menu option 1] This option can be used to review pairing status or pair a new wireless control module. If your thermostat already displays PAIRED CMOD but you wish to pair with a new control module, proceed to setting #4.				
3	**Wireless Sensor Pairing Mode**	PAIR	SENS	PAIRING SENS	Indicates the thermostat is ready to pair with a wireless remote sensor.
				PAIRED IDS1	Indicates the thermostat is paired with a wireless indoor sensor (IDS) and displays the sensor number. Up to 4 indoor sensors may be connected.
				PAIRED ODS	Indicates the thermostat is paired with a wireless outdoor sensor (ODS).
	[Only appears if SENS was selected for menu option 1] This option can be used to review pairing status or pair new wireless sensors. If your thermostat already displays paired sensors, but you wish to clear this connection and pair new sensors, proceed to setting #4.				
4	**Wireless Clear**	CLEAR	NONE	NONE	Select if you do not want to clear any wireless pairing.
				CMOD	Select to clear the pairing with the control module.
				SENS	Select to clear the pairing with all wireless sensors.
				ALL	Select to clear wireless connections with the control module and all wireless sensors.
	This option allows you to clear the wireless connections when necessary to reset the device or to add replacement sensors or modules. When selected, the screen will briefly confirm that the pairing has been cleared (i.e. CLEARED CMOD) and then return to the normal display. If desired, new pairing can now be initiated from options 1-3 of this menu.				

5 Wireless Setup

Pairing Wireless Devices

CONTROL MODULE

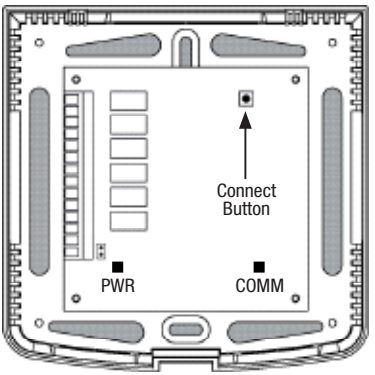
1 Wire and Install the Control Module
Properly wire and configure your thermostat. Refer to section 3.
NOTE: *The control module requires 24V hard wired power on the RC and C terminals in order to operate. Ensure the control module LED labeled PWR lights up blue before proceeding.*

2 Power Up Thermostat
Power up the thermostat using either 2 AA batteries or using the optional 24V hardwired power connections. The thermostat display should start up.

3 Initiate CMOD Wireless Pairing Mode on the Thermostat
Follow the steps on page 11 and use option #2 of the Wireless Menu to initiate Wireless Pairing mode.
NOTE: *If option #2 already displays PAIRED CMOD, see Clearing Wireless Connections on page 13.*

4 Put the Control Module into Wireless Pairing Mode
Open the cover of the Control Module and hold the CONNECT button for 3 seconds. The far right LED labeled COMM will start to flash slowly. This indicates the Control Module is now attempting to pair with the thermostat. When the pairing is successful, the COMM LED will turn solid blue to indicate a successful connection. The thermostat display should indicate PAIRED CMOD to confirm the pairing was successful.

5 Press NEXT (HOLD) to advance to pairing Wireless Sensors, or press RETURN (FAN) to exit the Wireless Menu.



Control Module (inside)

WIRELESS SENSORS

1 Power Up Thermostat
Power up the thermostat using either 2 AA batteries or using the optional 24V hardwired power connections. The thermostat display should start up.

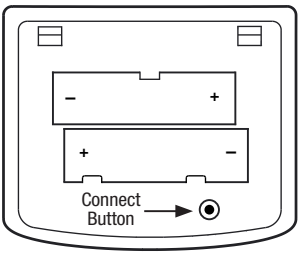
2 Power Up Wireless Remote Sensor
Install the 2 AA batteries and power up the Wireless Remote Sensor. Leave the housing or battery compartment door open for now, as we'll need to access the CONNECT button.

3 Initiate SENS Wireless Pairing Mode
Follow the steps on page 11 and use option #3 of the Wireless Menu to initiate Wireless Pairing mode. ***NOTE:*** *If option #3 already displays paired sensors, see Clearing Wireless Connections on page 13.*

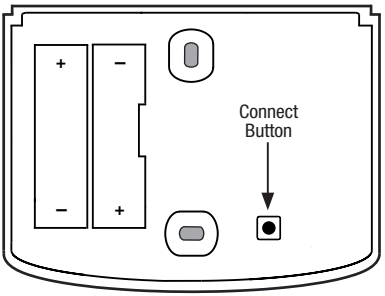
4 Put the Sensor into Wireless Pairing Mode
Open the cover of the sensor and hold the CONNECT button for 3 seconds. The sensor's LED will start to flash slowly. This indicates the sensor is now attempting to pair with the thermostat. When the pairing is successful, the LED will turn solid blue to indicate a successful connection. The thermostat display should indicate PAIRED and the type of sensor to confirm the pairing was successful. Connection Complete!

5 Press NEXT (HOLD) to advance to pairing additional Wireless Sensors, or press RETURN (FAN) to exit the Wireless Menu.

Model 7390
Wireless Indoor Sensor (back)



Model 7490 Wireless Outdoor Sensor (inside)



Clearing Wireless Connections

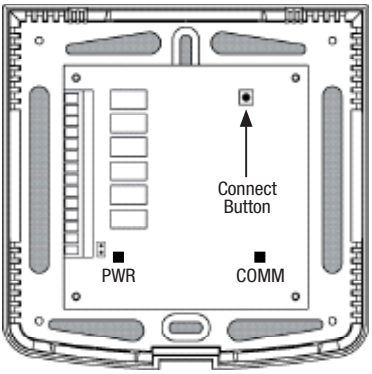
CONTROL MODULE

1 Clear Connection from the Thermostat
Follow the steps on page 11 and use option #4 of the Wireless Menu to clear the CMOD connection.
NOTE: *This action cannot be reversed. Once cleared, you must clear both devices and manually reconfigure the wireless pairing.*

2 Clear the Connection from the Control Module
Open the cover of the Control Module and hold the CONNECT button for 10 seconds. The far right LED labeled COMM will flash red quickly and then turn solid red. Once the COMM LED turns solid red, you can release the CONNECT button. At this point the control module will reboot, flashing the COMM LED blue once and red once to indicate a successful reset.

3 Clear Complete!
The association between the thermostat and the control module is now cleared, and both devices can be associated with a new partner when desired.

Control Module (inside)



WIRELESS SENSORS

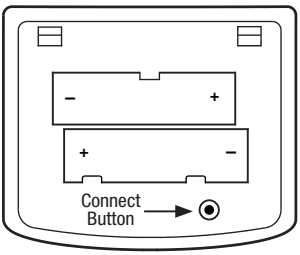
1 Clear Connection from the Thermostat
Follow the steps on page 11 and use option #4 of the Wireless Menu to clear the SENS connection.
NOTE: *This action cannot be reversed. Once cleared, you must clear both devices and manually reconfigure the wireless pairing.*

2 Clear the Connection from the Wireless Sensor
Open the cover of the sensor and hold the CONNECT button for 10 seconds. The sensor's LED will flash red quickly then turn solid red. Once the LED turns solid red, you can release the CONNECT button. The sensor will then restart, flashing the LED blue once and red once to indicate a successful reset.

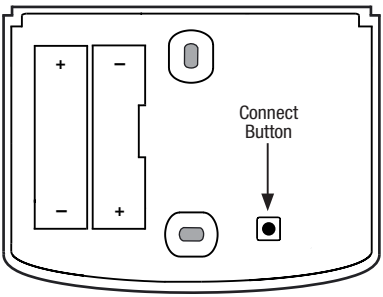
3 Repeat for All Wireless Sensors
If there are any other Wireless Sensors, they will need to be reset as well. Follow the instructions in step 2 at each sensor to ensure each has been cleared correctly.

4 Clear Complete!
The association between the thermostat and all wireless sensors is now cleared, and both devices can be associated with a new partner when desired.

Model 7390
Wireless Indoor Sensor (back)



Model 7490 Wireless Outdoor Sensor (inside)



6 Installer Settings

The Installer Settings must be properly configured in order for this thermostat to operate correctly. The Installer Settings are menu driven. The portion of these settings that do not apply to your setup will be skipped.

To Enter Installer Settings Menu

1. Press and hold the **MENU** button for 5 seconds.
2. Release the **MENU** button after the first installer setting is displayed.
3. Change settings as required using the ∧ or ∨ buttons.
4. Press **NEXT** (HOLD) or **BACK** (PROG) to move to the next or previous setting.
5. Press **RETURN** (FAN) to exit or wait 30 seconds.

No.	Installer Setting	Displayed	Default Setting	Available Settings	Description of Available Settings
1	**Residential or Commercial Profile**	MODE	RES	RES	Select for Residential profile
				COMM	Select for Commercial profile
	If residential mode is selected, 4 programming events per day are available (MORN, DAY, EVE, NITE). If commercial profile is selected, 2 programming events per day are available (OCC, UNOC).				
2	**Programming Mode**	PROGRAM DAYS	7	7	Select for 7-day programming mode
				52	Select for 5-2 day programming mode
				NO	Select for non-programmable mode
	[Only available if a Residential (RES) profile was selected in setting 1] Selects the programming capabilities of the thermostat, either full 7 individual days, 5-2 day (weekday/weekend) programming or non-programmable.				
3	**Clock Format**	CLOCK	12HR	12HR	Select for a 12-hour clock
				24HR	Select for a 24-hour clock
	Selects either a 12 hour or 24 hour clock format.				
4	**Temperature Scale**	DEGREE	F	F	Select for Fahrenheit temperature display
				C	Select for Celsius temperature display
	Selects a temperature scale of either °F or °C.				
5	**Auto Changeover**	AUTO CNG	OFF	OFF	Auto-Changeover disabled
				ON	Auto-Changeover enabled
	When auto-changeover mode is enabled and selected, the system can automatically switch between heating and cooling modes. There is a 5 minute delay when switching modes if auto changeover is selected. Auto changeover may affect your setpoint limit options in settings 25-26.				
6	**Auto Changeover Dead Band**	DEADBAND	3	2, 3, 4, 5	Select an Auto Changeover Dead Band of 2°, 3°, 4° or 5° F (1°, 2° or 3° C)
	[Only available if Auto Changeover was enabled in setting 5] When using auto changeover mode, the dead band is a forced separation between the heating and cooling setpoints so that the systems do not work against each other. This setting selects the amount of this dead band in degrees.				

No.	Installer Setting	Displayed	Default Setting	Available Settings	Description of Available Settings
7	**System Type**	SYSTEM	CONV 11	CONV 11	Select for 1H/1C Conventional system
				CONV 22	Select for 2H/2C Conventional system
				HP 11	Select for 1H/1C Heat Pump system
				HP 21	Select for 2H/1C Heat Pump system
				HP 32	Select for 3H/2C Heat Pump system
				HO 1	Select for heat-only Hydronic system
				HO 11	Select for Hydronic system with cooling
	Select the type of equipment you are controlling. The HP 32 system type is for a 2-stage heat pump compressor (stage 1 and 2) with auxiliary heat (stage 3).				
8	**1st Stage Differential**	DEGREE DIF1	0.5	0.5, 1.0, 2.0	Select a 1st stage temperature differential of 0.5°, 1° or 2° F (0.2°, 0.5° or 1.0° C)
	Selects a 1st stage temperature differential which controls the degree of separation between the setpoint temperature and the 1st stage of heating or cooling.				
9	**2nd Stage Differential**	DEGREE DIF2	2.0	1.0, 2.0, 3.0 4.0, 5.0, 6.0	Select a 2nd stage temperature differential of 1°, 2°, 3°, 4°, 5° or 6° F (0.5°, 1.0°, 1.5°, 2.0°, 2.5° or 3.0° C)
	[Only available if a 2 or 3 stage system was selected in setting 7] Selects a 2nd stage temperature differential which controls the degree of separation between the 1st and 2nd stage of heating or cooling.				
10	**3rd Stage Differential**	DEGREE DIF3	2.0	1.0, 2.0, 3.0 4.0, 5.0, 6.0	Select a 3rd stage temperature differential of 1°, 2°, 3°, 4°, 5° or 6° F (0.5°, 1.0°, 1.5°, 2.0°, 2.5° or 3.0° C)
	[Only available if a 3 stage system was selected in setting 7] Selects a 3rd stage temperature differential which controls the degree of separation between the 2nd and 3rd stage of heating.				
11	**Conventional Heat Fan Control**	FAN 1	GAS	GAS	Select for conventional Gas heating
				ELEC	Select for conventional Electric heating
	[Only available if a conventional system was selected in setting 7] Selects a 1st stage fan control of either gas or electric heat. If Electric is selected, the thermostat turns on the system fan with a call for heating.				
12	**Emergency Heat Fan Control**	EMER FAN	ELEC	ELEC	Select for Electric Emergency Heat
				GAS	Select for Gas Emergency Heat
	[Only available if a 2 or 3 stage heat pump system was selected in setting 7] Selects emergency heat fan control of either gas or electric heat. If Electric is selected, the thermostat turns on the system fan with a call for emergency heat.				
13	**Reversing Valve (O/B Terminal)**	R VALVE	O	O	Select for cool active Reversing Valve
				B	Select for heat active Reversing Valve
	[Only available if a heat pump system was selected in setting 7] Selects the output state of the O/B terminal. Select O for this terminal to be active in the cool mode or select B for this terminal to be active in the heat mode.				
14	**Fossil Fuel Backup Heat**	AUX HEAT	ELEC	ELEC	Select for Electric Auxiliary heat (with compressor)
				GAS	Select for Gas Auxiliary heat (without compressor)
	[Only available if a 2 or 3 stage heat pump system was selected in setting 7] When set to electric, both the compressor and auxiliary stage will run when a call for auxiliary heat is made. When set to gas, the compressor stage(s) will be locked out one minute after a call for auxiliary heat. This setting can be overridden if setting an auxiliary heat balance point in setting 24.				

No.	Installer Setting	Displayed	Default Setting	Available Settings	Description of Available Settings
15	**Compressor Power Outage Protection**	CPOP	OFF	OFF	Power outage lockout delay is disabled
				ON	Power outage lockout delay is enabled
	[Only available if a heat pump system was selected in setting 7 and thermostat is powered with a 24 VAC common (C) wire] When enabled, this thermostat will provide cold weather compressor protection by locking out the compressor stage(s) of heating for a period of time after a power outage greater than 60 minutes.				
16	**AC Power Interrupt Warning**	POWR MON	OFF	OFF	AC Power Interrupt Warning is disabled
				ON	AC Power Interrupt Warning is enabled
	[Only available if thermostat is powered with a 24 VAC common (C) wire] When enabled, the thermostat will display NO POWER when AC power to the thermostat is lost. Batteries must also be installed for this feature to operate.				
17	**Compressor Short Cycle Protection (CSCP)**	CSCP MIN	5	5, 4, 3, 2, 1, 0	Select CSCP delay duration in minutes
	Selects the number of minutes the compressor(s) will be locked out after turning off. This delay will run simultaneously with any delay built into the equipment.				
18	**Residual Cooling Fan Delay**	RESIDUAL COOL	60	90, 60, 30, 0	Select fan delay duration in seconds
	Selects a delay for the system fan after the cooling compressor has turned off. This delay will help remove the remaining cool air out of the ductwork providing additional efficiency.				
19	**Circulating Fan Lock**	CIRCLOCK	OFF	OFF	Circulating Fan Lock is disabled
				ON	Circulating Fan Lock is enabled
	[Not available if 1 HD was selected in setting 7] When enabled, the only user fan settings available are ON and CIRC (Circulation). The AUTO and PROG fan settings are not available with this setting enabled.				
20	**Adaptive Recovery Mode (ARM™)**	RECOVER	OFF	OFF	Adaptive Recovery Mode is disabled
				ON	Adaptive Recovery Mode is enabled
	[Not available if non-programmable was selected in setting 2] During ARM, room temperature is recovered by turning on the heating or cooling up to 3-hours before the end of the set back period. The setpoint temperature is changed to that of the upcoming program temperature.				
21	**Indoor Remote Sensor Control**	REMOTE SENS	I	I	Temperature is sensed from thermostat only (Internal)
				E	Temperature is sensed from remote sensor only (External)
				A	Temperature is averaged between thermostat and remote sensor (Average)
	[Only available if Braeburn® indoor sensor is connected] If a Braeburn indoor remote sensor is connected, the thermostat will automatically detect the sensor. When an indoor sensor is detected, you may select between thermostat only (1), remote sensor only (E) or the average of the thermostat and remote sensor (A).				
22	**User Lock Security Level**	USERLOCK LVL	3	3	If locked, all buttons are disabled
				2	If locked, all buttons except ∧ and ∨ are disabled
				1	If locked, only the PROG, HOLD and MENU buttons are disabled
	Selects the level of keypad lockout when the thermostat has been locked by the user. See the User Manual for instructions on setting the 3-digit lock code and locking/unlocking the thermostat.				

No.	Installer Setting	Displayed	Default Setting	Available Settings	Description of Available Settings
23	**Compressor Balance Point**	BALPOINT COMP	NO	NO	Compressor Balance Point is disabled
				0 to 50 (-18° to 10°C)	Select a Compressor Balance Point of 0° to 50° (-18° to 10°C)
	[Only available for 2 or 3 stage heat pump systems with a Braeburn® outdoor sensor connected] Locks out the use of the heat pump compressor's heat stage(s) when the outside air temperature is less than the selected setting. During this lockout period, only the auxiliary heat stage will operate.				
24	**Auxiliary Heat Balance Point**	BALPOINT AUX	NO	NO	Auxiliary Heat Balance Point is disabled
				70 to 40 (21° to 4°C)	Select an Auxiliary Heat Balance Point of 70° to 40°F (21° to 4°C)
	[Only available for 2 or 3 stage heat pump systems with a Braeburn outdoor sensor connected] Locks out the use of the auxiliary heat stage when the outside air temperature exceeds the selected setting. This balance point overrides the fossil fuel compressor lockout in setting 14. If setting 14 is set to gas and the outdoor temperature is over the auxiliary balance point, the compressor will remain on during a call for auxiliary heat.				
25	**Heat Setpoint Upper Limit**	HIGH LIM HEAT	90	90 - 45 (32° to 7°C)	Select a Heat Setpoint Upper Limit of 90° to 45°F (32° to 7°C)
	Selects the upper setpoint adjustment limit that cannot be exceeded in heat mode.				
26	**Cool Setpoint Lower Limit**	LOW LIM COOL	45	45 - 90 (7° to 32°C)	Select a Cool Setpoint Lower Limit of 45° to 90°F (7° to 32°C)
	[Not available for heat-only hydronic systems] Selects the lower setpoint adjustment limit that cannot be exceeded in cool mode.				
27	**Installer Clear (factory reset)**	CLEAR	NONE	NONE	Clear disabled - no changes made
				ALL	Clear enabled - factory reset
	Selecting ALL will return thermostat to all factory default settings. Factory reset will take affect upon exiting Installer settings menu.				

Additional options such as Service Monitors, Setting the Lock Code, etc., are located in the User Settings - See User Manual.

7 System Testing

⚠ Warning *Read Before Testing*

- Do not short (or jumper) across terminals on the gas valve or at the heating or cooling system control board to test the thermostat installation. This could damage the thermostat and void the warranty.

- Do not select the COOL mode of operation if the outside temperature is below 50º F (10º C). This could possibly damage the controlled cooling system and may cause personal injury.

- This thermostat includes an automatic compressor protection feature to avoid potential damage to the compressor from short cycling. When testing the system, make sure to take this delay into account.

NOTE: *The compressor delay can be bypassed by pressing the reset button on the front of the thermostat. All user settings will be returned to factory default, however all Installer settings will remain as originally programmed in section 6.*

1 Press **SYSTEM** until the thermostat is in HEAT mode.
2 Using the ∧ and ∨ buttons, raise the set temperature a minimum of 3 degrees above the current room temperature. The system should start within a few seconds. With a gas heating system, the fan may not start right away.
3 Press **SYSTEM** until the thermostat is in the OFF mode. Allow the heating system to fully shut down.
4 Press **SYSTEM** until the thermostat is in the COOL mode.
5 Using the ∧ and ∨ buttons, lower the set temperature a minimum of 3 degrees below the current room temperature. The system should start within a few seconds (unless compressor short cycle protection is active – See note above).
6 Press **SYSTEM** until the thermostat is in the OFF mode. Allow the cooling system to fully shut down.
7 Press **FAN** until the thermostat is in FAN ON mode. The system fan should start within a few seconds.
8 Press **FAN** until the thermostat is in FAN AUTO mode. Allow the system fan to turn off.
9 If the thermostat is controlling auxiliary equipment such as a humidifier, adjust the thermostat settings to test these devices.

Regulatory Statements

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux CNR exempts de licence d'Industrie Canada. Son fonctionnement est soumis aux deux conditions suivantes :

(1) Ce dispositif ne peut causer des interf é rences ; et
(2) Ce dispositif doit accepter toute interf é rence , y compris les interf é rences qui peuvent causer un mauvais fonctionnement de l'appareil.

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Limited Warranty

When installed by a professional contractor, this product is backed by a 5 year limited warranty. Limitations apply. For limitations, terms and conditions, you may obtain a full copy of this warranty:

- Visit us online: www.braeburnonline.com/warranty
- Write us: Braeburn Systems LLC
  2215 Cornell Avenue
  Montgomery, IL 60538

Store this manual for future reference.
www.braeburnonline.com

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